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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,969	11/17/1999	SHUNICHI SEKI	104741	7385

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EXAMINER
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MAI, ANH D

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/423,969	Applicant(s) SEKI ET AL.	
	Examiner Anh D. Mai	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) 13-16, 25-47, 49-68, 72, 74 and 80 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 17-24, 48, 69-71, 73 and 75-79 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 13-16, 25-29 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Applicants have elected claims that directed to the invention of semiconductor device. (See Paper No. 7).

This invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 13-16 and 25-29 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Amendment***

2. The proposed Amendment filed February 12, 2003 has not been entered. Claims 1-80 are pending. Claims 13-16, 25-47, 49-68, 72, 74 and 80 are withdrawn, non-elected invention.

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on April 21, 2000 has been considered by the examiner and entered as Paper No. 4. A considered and signed copy has been given to Mr. Michael Britton, Reg. No. 47,260 in the Personal Interview on February 5, 2003. The IDS submitted June 14, 2002 has been determined to be a duplicate of the earlier submission thus, has been treated as such.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-9, 17-22, 28, 29, 48, 69-73 and 75-79 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shirasaki et al. (JP. Patent No. 11-040354) of record.

With respect to claim 1, insofar as the device is concerned, Shirasaki teaches a thin film patterning substrate as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e);

the banks (1e) having a width, a height thereof, the areas to be coated having a width; and

a liquid material (1d) coated the areas (6) partitioned by the banks (1e). (See Figs. 4 and 5).

Note that, the areas (6) partitioned by the banks (1e) have been coated by the liquid material (1d). Therefore, the limitation of the claim is met.

With respect to claims 2-4, the banks (1e) of Shirasaki appears to satisfied relationships as claimed.

With respect to claim 5, the thin film patterning substrate of Shirasaki further includes: an organic substance (1d) formed on at least upper surfaces of the banks (1e).

With respect to claim 6, the thin film patterning substrate of Shirasaki further includes: an organic substance (1d) formed on at least upper surfaces and side surfaces of the banks (1e).

With respect to claim 7, the thin film patterning substrate of Shirasaki further includes: the banks (1e) being formed in two layers including: a lower-layer (1e) of inorganic substance ( $\text{SiO}_2$ ) and an upper-layer (1d) of organic substance.

With respect to claim 8, the device of Shirasaki further includes: at least the side surface of the inorganic substance (1e) are not covered by the organic substance (1d).

With respect to claim 9, the device of Shirasaki further includes: the areas (6) to be coated being an inorganic substance (1b).

With respect to claim 17, the device of Shirasaki is a display device comprising a thin film element as claimed.

With respect to claim 18, the device of Shirasaki comprises the display device and a circuit device for the display device. (See Figs. 8-9).

With respect to claim 19, insofar as the semiconductor device is concerned, Shirasaki teaches a thin film patterning substrate used for forming thin films in patterns as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e); and

the banks (1e) having surfaces being formed of an organic substance (1d), and the areas to be coated (6) are formed of an inorganic substance (1b). (See Figs. 4-5).

Product by process limitation:

The expression "patterns by a dip process or spin-coating process" is taken to be a product by process limitation and is given no patentable weight. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

With respect to claim 20, insofar as the semiconductor device is concerned, Shirasaki teaches a thin film patterning substrate used for forming thin films in patterns as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e); and

the banks (1e) having upper surfaces and side surfaces being formed of an organic substance (1d), and the areas to be coated (6) are formed of an inorganic substance (1b). (See Fig. 4).

Product by process limitation: (See above).

With respect to claim 21, insofar as the semiconductor device is concerned, Shirasaki teaches a thin film patterning substrate used for forming thin films in patterns as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e); and

the banks (1e) being formed in two layers including a lower-layer of inorganic substance (1e) and an upper-layer of organic substance (1d), and the areas to be coated (6) are formed of an inorganic substance (1b). (See Fig. 4).

Product by process limitation: (See above).

With respect to claim 22, the device of Shirasaki further includes: the banks having side surfaces of a lower-layer (1e) not covered by the organic substance (1d).

With respect to claims 48 and 69, Shirasaki teaches a display device.

With respect to claims 70, 71 and 73, the display device of Shirasaki comprising a color filter, an organic EL element.

With respect to claim 75, the device of Shirasaki includes a horizontal shape portions enclosed by the banks (1e) being circular or elliptical.

With respect to claim 76, Shirasaki teaches a thin film patterning substrate having a substrate (1a) and banks (1e) formed on the substrate (1a) in a prescribed pattern, opening in the banks (1e) being formed in a ring shape.

With respect to claim 77, the ring shape opening in the banks (1e) of Shirasaki includes circular or elliptical shape.

With respect to claim 78, Shirasaki teaches an EL element having a substrate (1a) and banks (1e) formed on the substrate (1a) in a prescribed pattern, and thin film of a light emitting material (1d) in areas enclosed by the banks (1e), a shape of openings in the banks (1e) being formed in a ring shape.

With respect to claim 79, the ring shape opening in the banks (1e) of Shirasaki includes circular or elliptical.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki '354 as applied to claim 1 above, and further in view of Nagayama et al. (U.S. Patent No. 6,373,187) of record.

Shirasaki teaches all the features of the claim with the exception of explicitly disclosing a reservoir (groove) structure on the upper surface of the banks (1e).

However, Nagayama teaches recess portion (120c) formed on the top surface of the partition walls (120a) to enhance an effect of preventing a possible electric short.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to form recess (120c) on the upper surface of the partition banks (1e) of Shirasaki as taught by Nagayama to prevent possible electric short between two adjacent electrode.

6. Claims 11, 12, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki '354 as applied to claims 5 and 19 above, and further in view of Tabayashi (JP. Patent No. 06-347637) of record.

With respect to claims 11 and 23, Shirasaki teaches all the features of the thin film patterning substrate as claimed with the exception of further includes a surface treatment of the banks (1e).

However, Tabayashi teaches treating the partition pattern so that the partition pattern contains a substance based water-repellent and oil-repellent agent.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to treat the surface of the thin film pattern substrate of Shirasaki using

the repellent –based as taught by Tabayashi to obtain uniform light transmissivity and freed from defective pixel.

*Product by process limitation:*

The expression “being performed so that an angle of contact of the organic substance surface forming said banks is...thin film liquid material is 30° or greater (or less)” “by plasma treatment” are taken to be a product by process limitation and is given no patentable weight. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps, which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

With respect to claims 12 and 24, the thin film pattern substrate of Shirasaki, in view of Tabayashi has been surface modified.

***Response to Arguments***

7. Applicant's arguments with respect to elected claims have been considered but are moot in view of the new ground(s) of rejection.

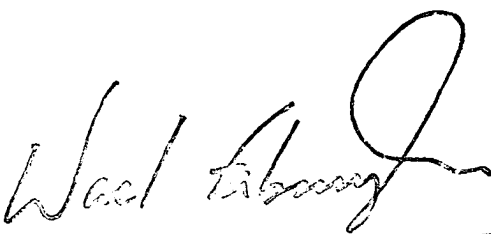
*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh D. Mai whose telephone number is (703) 305-0575. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.M  
March 31, 2003

  
SUPERVISOR/PRIMARY EXAMINER  
TECHNOLOGY CENTER 2800